ABSTRACT

The integration period of an imaging cell, or the time that an imaging cell is exposed to light energy, is substantially increased by utilizing a single-poly, electrically-programmable, read-only-memory (EPROM) structure to capture the light energy. Photogenerated electrons are formed in the channel region of the EPROM structure from the light energy. The photogenerated electrons are then accelerated into having ionizing collisions which, in turn, leads to electrons being injected onto the floating gate of the EPROM structure at a rate that is proportionate to the number of photons captured by the channel region.